

CLAIMS:

1. In a fluid coupling having an impeller with an impeller casing and a runner, said impeller and runner having facing cavities, said impeller being driven by a diesel engine, the improvement comprising axial holes through said runner near the inside diameter of said runner for venting the impeller and runner cavities.

2. The improvement of claim 1 wherein said axial holes through the impeller casing are located near the inside diameter of said impeller casing for a portion of the circuit oil flow to exit the fluid coupling rotating element during normal engaged operation.

3. The improvement of claim 1 including a cavity in the back side of the impeller and near the inside diameter of the impeller that is provided to receive and capture a supply spray of circuit oil and passageways from this cavity to the impeller cavity that are provided to permit the circuit oil to pass into the impeller cavity.

4. The improvement of claim 1 wherein radial holes are provided through the periphery of the impeller or impeller casing for a portion of circuit oil to exit for measuring the operating temperature of the circuit oil and for vacating the impeller and runner cavities of the rotating element when a circuit oil diverter valve is operated to bypass the circuit oil to a reservoir.

5. The improvement of claim 4 including a temperature sensor that senses the temperature of the circuit oil as it exits the radial holes through the periphery of the impeller or impeller casing, the temperature sensor being operatively connected to said diverter valve such that when the temperature of the circuit oil discharging from the impeller or impeller casing exceeds a preset set point temperature, the diverter valve is caused to bypass the circuit oil to the reservoir.

6. The improvement of claim 1 wherein said impeller, impeller casing, and said runner are made of steel.

7. In a fluid coupling having an impeller with an impeller casing and a runner, said impeller and runner having facing cavities, said impeller being driven by a diesel engine, the improvement comprising radial holes through the perimeter of said impeller or impeller casing, replaceable orifice plugs mounted in said holes for selectively regulating the amount of oil passing through said holes, a reservoir into which the bulk of circuit oil from said cavities escaping through said holes drains, a trough into which a relatively small amount of circuit oil passes from said holes, and a temperature responsive control in said trough, said temperature responsive control being operatively connected to a diverter valve, responding to an over-temperature condition to cause said diverter valve to divert circuit oil from the said cavities to said reservoir.

8. The improvement of claim 4 including replaceable orifice plugs installed in said radial holes, wherein the size or sizes of the orifice is selected to achieve certain rates of evacuation of said impeller and runner cavities for a particular operating condition of the fluid coupling.

9. The improvement of claim 4 including a pump operatively connected to said reservoir, said pump having an inlet in said reservoir positioned below the expected level of oil in said reservoir.

10. The improvement of claim 9 wherein the said reservoir is mounted on a flange on the bottom of said fluid coupling.

11. The improvement of claim 10 wherein the flange is integral with the fluid coupling.